



COMNAVAIRLANT AVIATION MAINTENANCE INSPECTIONS

AVIATION MAINTENANCE SAFETY
CONFERENCE APRIL 2004

COMNAVAIRLANT N422C

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TYCOM (CNAP/CNAL) Aviation Maintenance Management Teams (AMMT)

- Chartered by the NAMP
- Standardized by
COMNAVAIRFORINST 4790.44.



Aviation Maintenance Inspection (AMI)

Process changes began in Dec 02

CNAP/CNAL AMMT's developed revised inspection methodology

CNAF INST 4790.44 dated January 7, 2004 para 3b states the TYCOM, TYPE WINGS, and MAWs share responsibility to periodically evaluate fleet maintenance activities for:

- Ability to safely and efficiently perform its mission
- Achieve desired levels of readiness, safety, and deployability
- Standardization of maintenance related requirements, practices, and procedures
- Identify performance improvements opportunities and assist in implementation



Definitions

- **Effectiveness**

- The ability to achieve desired mission-oriented results on a continual basis

- **Efficiency**

- The ability to be effective while maximizing available resources and minimizing effort and external assistance



Aviation Maintenance Inspection

What the teams do:

Evaluate maintenance programs and processes in terms of effectiveness and efficiency

- Assess the capability of the Maintenance Department or IMA to support operational requirements on a continual basis
- Verify the activity's ability to demonstrate safe operational support
- Inspect for instructional compliance



Aviation Maintenance Inspection

How the teams do it:

Pre-Inspection Data Analysis:

- Examination of available data with special attention placed on non-optimal trends and potential inefficient processes

Observational Analysis:

- Observation of ongoing maintenance, communication and management

Verification of safe maintenance practices:

- Performance of maintenance related scenarios (Drills) and routine maintenance related task evaluations (Practical Proficiency Evaluations).

Instructional Compliance:

- Inspection of NAMP and other applicable directive compliance

Recurrent Safety Related Discrepancies*



Organizational Level
&
Intermediate Level

* As noted by CNAL AMMT since
May 03

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Top Five “O” Level Recurring Safety Concerns



Support Equipment PMS:

Ignored to the point that direct safety of personnel concerns exist

- Non RFU SE is not tagged and is not restricted from aircraft use
- SE overdue for PM's; Maintenance Control and QA taking no action
- SE maintenance not given proper priority; Mission accomplishment is being achieved at the expense of safety
- Surveyed MMF used as work centers without maintenance being performed; Exposed wiring presents a shock hazard

Top Five “O” Level Recurring Safety Concerns



Technical Directives/Logbooks:

Over-flown components with direct safety of flight implications

- Inventory pages do not reflect the components actually installed
 - NALCOMIS does not match logbooks
- Technical Directive compliance overdue
- Multiple cases of undocumented Technical Directives
 - Status Unknown

Top Five “O” Level Recurring Safety Concerns



Hangar Bay/Apron:

- Lack of certified grounding points; Grounding points exceed allowable tolerances
- Failure to use grounding points on the ramp

LOX servicing & OBOGS Testing

- OBOGS System not tested IAW MIM's or MRC's
- LOX Bottle Pressure relief valve test fixture required by MIMs not utilized

CTPL degraded to the point pub integrity is unknown

- TPL database is invalid; missing pub entries, inaccurate database
- Maintenance performed with out-of-date references; technical pubs out of date, missing changes & IRACS

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Top Five “I” Level Safety Concerns



Support Equipment PMS:

SE ignored to the point that direct safety of personnel concerns exist

- Critical items of SE and AWSE including lifting slings and full power run-up chains overdue for PMs
- Non RFU SE is not tagged and is not restricted from use
- Not all SE is loaded in NALCOMIS
- Component slings have no record of scheduled maintenance
- Numerous OPNAV 4790/51 records missing

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Top Five “I” Level Safety Concerns



Oxygen cylinders improperly stored

- Stored near HAZMAT disposal area
- Storage located in welding work center, full bottles can not be identified from empty ones
- Oxygen storage cage contains both Acetylene and Oxygen cylinders

Electrical Shock awareness training is inadequate.

- Personnel should be familiar with all power sources for workstations, test benches, and dual power sourced benches.

Top Five “I” Level Safety Concerns



Engine Test Facility

- Maintenance, spaces, and training are inadequate
- 10/50 hour PM inspections were not being performed
- Test Cell instructors are not properly certified
- Test Cell Cab is used as both an operations control point and an office space, posing a potential hazard in the event of an emergency

Oxidizers and Hydrocarbons

- Stored together in HAZMAT cage posing a potential explosive hazard



Recurring Program/Process Effectiveness Failures*

Organizational Level
&
Intermediate Level

* As noted by CNAL AMMT since May 03

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Recurring “O” Level Program/Procedure Effectiveness Failures

Maintenance Control:

- Aircraft released Safe for Flight with incomplete daily inspections
- Drop tank, FLIR, Mission pod status not monitored by Maint Ctrl
- Numerous MAFs in an UP status when they should have been DOWN.
- Failure to use MESM.
- Aircraft launched with overdue special inspections

Technical Directives/Logbooks – (As noted in safety concerns)

CTPL – (As noted in safety concerns)

SE PMS – (As noted in safety concerns)

LOX/OBOGS – (As noted in safety concerns)

Recurring “I” Level Program/Process Effectiveness Failures



Production Control:

- NALCOMIS reports are not used
- 400 Division PC not screening engine and propeller build sheets
- Cannibalization is not controlled by PC
- PC supervisors are not familiar with standard report management procedures
- PC does not have positive control of maintenance
- OPNAV 4790/51 records missing

CTPL:

- QA does not properly manage the CTPL
- Numerous publications out of date
- IRACS not procured or incorporated in a timely manner
- JATDI server not updated



Recurring “I” Level Program/Proc Effectiveness Failures

SE PMS – (As noted in safety concerns)

Gas Turbine Engine Maintenance Program:

- Locally generated “Build Packages” are incomplete; numerous CDI and QA signatures/initials missing throughout the maintenance, repair and pre/post cell process
- No effective tool in place to ensure all “in process” inspections are completed
- No way to track the flow of maintenance during engine tear down/build up
- Sequence Control Chart (SCC) not utilized

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Quality Assurance Concerns

- The Quality Assurance process has been identified as a failure and ineffective in 3 organizations
- Often the process is identified as inefficient
 - Audit/monitors not conducted IAW NAMP requirements
 - Quality of audits suspect; discrepancies discovered by inspectors soon after a QA audit and during practical proficiency evaluations
 - Follow-ups not performed on discrepancies noted in audits
 - Despite follow-ups no corrective action taken on discrepancies noted; problems not elevated to proper level to correct



Quality Assurance Concerns

Level of expertise is often lacking

- QAR's are not trained in Auditing techniques
- QAR's are not assigned responsibilities commensurate with experience
- QA Monitor's not trained in areas outside their normal rating assignment; SE PMS, TD's, Logs/Records, Maint & Prod Control



Quality Assurance Concerns

- Failure of Quality Assurance to properly oversee the quality of the maintenance effort is the most common root cause for other failures in the maintenance department.
- Inadequately trained QAR's consistently fail to identify significant problems.
- Symptomatic discrepancies are often noted but QA often fails to recognize the true scope of a failed maintenance program or process.



Questions?